

**BEFORE THE DEPARTMENT OF
NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA**

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APPLICATION TO CHANGE WATER RIGHT NO. 76G 30149275 BY ASPEN GROVE RANCH LLC, SHERMAN G. ANDERSON & BONNIE J. ANDERSON	}	PRELIMINARY DETERMINATION TO GRANT CHANGE
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On August 10, 2020 Aspen Grove Ranch, LLC, Sherman G. Anderson and Bonnie J. Anderson (Applicants) submitted Application to Change An Existing Irrigation Water Right No. 76G 30149275 to change Statement of Claim Nos. 76G 126427 and 76G 126428 to the Helena Regional Office of the Department of Natural Resources and Conservation (Department or DNRC). The Department published receipt of the Application on its website. The application was transferred to the Lewistown Regional Office for processing. The Department sent Applicants a deficiency letter under §85-2-302, Montana Code Annotated (MCA), December 29, 2020. Applicants responded with information received February 11, 2021. The Application was determined to be correct and complete on July 20, 2021. An Environmental Assessment for this Application was emailed on September 26, 2021.

INFORMATION

The Department considered the following information submitted by the Applicants.

Application as filed:

- Form 606 – Application To Change An Existing Irrigation Water Right, and attachments:
 - Maps of the existing and proposed projects;
 - Schematic/specifications of proposed irrigation system from the irrigation dealer;
 - Water Commissioner records from 1963 and 1983.

Information Received after Application Filed:

- Applicants' deficiency letter response and attachments received by the Department on February 11, 2021.
- Field Efficiency email, dated April 30, 2021.
- Signature Page with Sherman and Bonnie Anderson's signatures received by the Department on May 5, 2021.
- Flow Rate Clarification email, dated May 20, 2021.
- Amendment to Application received by the Department on May 24, 2021.

- Period of Diversion/Use Clarification email, dated May 25, 2021.
- Amendment Follow-Up email, dated June 1, 2021.
- Pipeline Diversion Structure email, dated June 1, 2021.
- Applegate's Agreement Letter email and attachments received by the Department on June 24, 2021.
- Headgate Clarification email and attachments received by the Department on July 26, 2021.
- Applicant Clarification email and attached letter received by the Department on August 25, 2021.

Information within the Department's Possession/Knowledge

- Water right records, including the files for the Statements of Claim proposed to be changed in this matter and records of all water rights in the basin.
- 1959 Powell County Water Resources Survey materials, including field notes, aerial imagery, etc.
- USDA aerial photograph no. 178-135, dated 08/10/1979, owned by the Department and publicly-available.
- U.S. Geological Survey topographic maps and aerial photos owned by the Department and publicly-available.
- Environmental Assessment dated September 24, 2021.
- Department Technical Report dated July 27, 2021.
- Department Memorandum, Amended Return Flow Analysis based on Historical Consumptive Use, dated September 27, 2021

The Department also routinely considers the following information. The following information is not included in the administrative file for this Application but is available upon request. Please contact the Lewistown Regional Office at 406-538-7459 to request copies of these documents.

- Department Memorandum - Development of Standardized Methodologies to Determine Historic Diverted Volume, Sept. 2012.
- Department Policy Memorandum on Return Flows, April 1, 2016.

The Department has fully reviewed and considered the evidence and argument submitted in this Application and preliminarily determines the following pursuant to the Montana Water Use Act (Title 85, chapter 2, part 3, part 4, MCA).

WATER RIGHT TO BE CHANGED

FINDINGS OF FACT

1. Applicants seek to change Statement of Claim Nos. 76G 126427 and 76G 126428. The water rights are for irrigation purposes from the Cowen Ditch on Cottonwood Creek. The irrigated places of use are located about 3.5 miles east of Deer Lodge, Montana. A table of the claimed elements of the water rights follows:

Table 1: WATER RIGHTS PROPOSED FOR CHANGE

WR Number (Statements of Claim)	Purpose	Flow Rate	Period of Use	Point of Diversion	Place of Use	Priority Date	Acres
76G 126427	Irrigation	5.0 CFS	4/15 – 10/19	SWNWSW Sec 9, T7N, R8W	Sec 31, T8N, R8W, and Sec 6, T7N, R8W	Apr 5, 1886	315.0
76G 126428	Irrigation	15.0 CFS	3/15 – 7/19	SWNWSW Sec 9, T7N, R8W	Sec 31, T8N, R8W, and Sec 6, T7N, R8W	Mar 3, 1906	315.0

CHANGE PROPOSAL

FINDINGS OF FACT

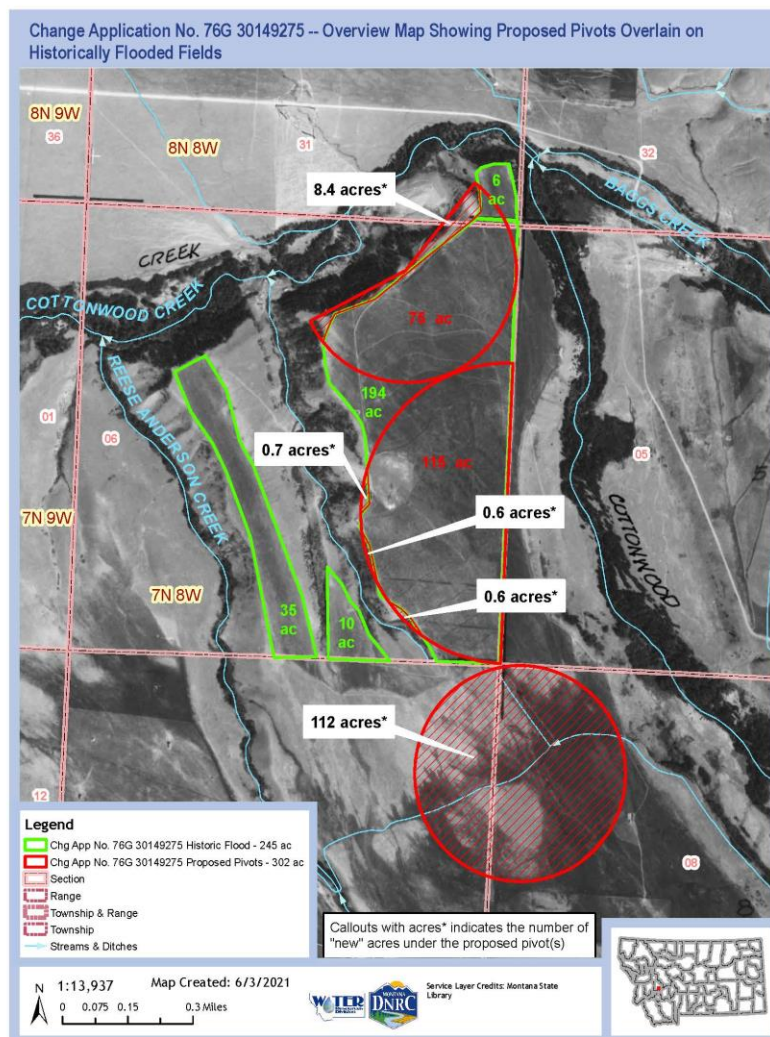
2. Applicants propose to add a point of diversion to each water right. The additional diversion will facilitate a change in irrigation method from flood to center pivot sprinkler on a portion of the existing place of use. The proposed flow rate for three center pivots¹ is 5.17 cubic feet per second (CFS) and the diverted volume is 271.4 acre-feet (AF). The place of use for the center pivots will generally lie in the SESESE Section 31, T8N, R8E and the E2 Section 6, E2NE Section 7, and W2NW Section 8 in T7N, R8W. The means of diversion will change from a headgate and open ditch (former diversion structure for the Cowan Ditch) to a headgate and buried pipeline. The proposed pipeline will appropriate water from Cottonwood Creek at the historical location of the

¹ Two partial pivots in the SESESE Sec 31 T8N, R8W and E2 Sec 6 T7N, R8W. One full pivot in the E2NE Sec 7 and W2NW Sec 8 in T7N, R8W.

Stejer Ditch² headgate which is located in the NESWSW Section 9, T7N, R8W. Applicants propose to bury a pipeline along the ditch contour.

3. The full center pivot, proposed in the E2NE Sec 7 and the W2NW Sec 8, is also involved in a separate and concurrent change application proceeding. In the concurrent proceeding, historical water use on the 81-acre place of use for Statement of Claim no. 76G 4523 is proposed to be reconfigured and used on the expanded South Pivot (full center pivot) acreage. The method of irrigation will be converted from flood to sprinkler irrigation and the Applicants will cease using an open ditch to carry water to their field and propose to bury a pipeline in the ditch (Stejer Ditch). The buried pipeline will be used to convey water for the new, three-pivot system.

An overview map of the proposed project follows:



² The Stejer Ditch is located upstream of the Cowan Ditch.

CHANGE CRITERIA

4. The Department is authorized to approve a change if the applicant meets its burden to prove the applicable § 85-2-402, MCA, criteria by a preponderance of the evidence. Matter of Royston, 249 Mont. 425, 429, 816 P.2d 1054, 1057 (1991); Hohenlohe v. DNRC, 2010 MT 203, ¶¶ 33, 35, and 75, 357 Mont. 438, 240 P.3d 628 (an applicant's burden to prove change criteria by a preponderance of evidence is "more probably than not."); Town of Manhattan v. DNRC, 2012 MT 81, ¶8, 364 Mont. 450, 276 P.3d 920. Under this Preliminary Determination, the relevant change criteria in §85-2-402(2), MCA, are:

(2) Except as provided in subsections (4) through (6), (15), (16), and (18) and, if applicable, subject to subsection (17), the department shall approve a change in appropriation right if the appropriator proves by a preponderance of evidence that the following criteria are met:

(a) The proposed change in appropriation right will not adversely affect the use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued under part 3.

(b) The proposed means of diversion, construction, and operation of the appropriation works are adequate, except for: (i) a change in appropriation right for instream flow pursuant to 85-2-320 or 85-2-436; (ii) a temporary change in appropriation right for instream flow pursuant to 85-2-408; or (iii) a change in appropriation right pursuant to 85-2-420 for mitigation or marketing for mitigation.

(c) The proposed use of water is a beneficial use.

(d) The applicant has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use or, if the proposed change involves a point of diversion, conveyance, or place of use on national forest system lands, the applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water. This subsection (2)(d) does not apply to: (i) a change in appropriation right for instream flow pursuant to 85-2-320 or 85-2-436; (ii) a temporary change in appropriation right for instream flow pursuant to 85-2-408; or (iii) a change in appropriation right pursuant to 85-2-420 for mitigation or marketing for mitigation.

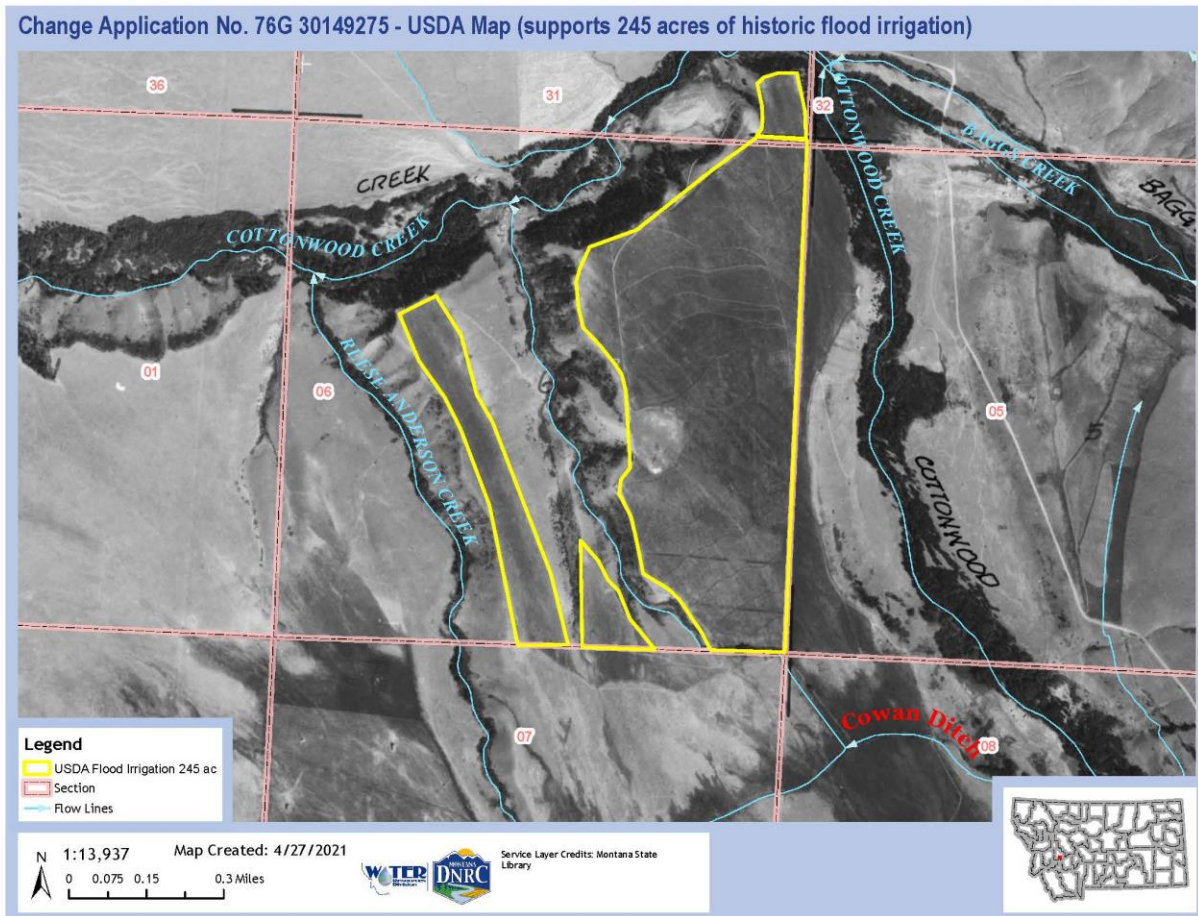
5. The evaluation of a proposed change in appropriation does not adjudicate the underlying right(s). The Department's change process only addresses the water right holder's ability to make a different use of that existing right. E.g., Hohenlohe, at ¶¶ 29-31; Town of Manhattan, at ¶8; *In the Matter of Application to Change Appropriation Water Right No.41F-31227 by T-L Irrigation Company* (DNRC Final Order 1991).

HISTORIC USE AND ADVERSE EFFECT

FINDINGS OF FACT - Historic Use

6. *Water Right* - The water rights to be changed are Statement of Claim Nos. 76G 126427 and 76G 126428. The elements of historic use, as claimed or amended for adjudication purposes, are described above in Table 1, Finding of Fact No. 1.

7. *Acres Irrigated and Place of Use* – The 1959 Powell Co. Water Resources Survey (including a 1947 aerial photograph accompanying the survey) supports 233 acres of flood irrigation within Applicants' claimed place of use. USDA Photo 178-135, dated 8/10/1979, shows 245 acres of Applicants' place of use as irrigated. Applicants assert that water was put to historical use prior to July of 1973 and historical irrigation included all 245 acres as shown on the 1979 aerial photo. Department Technical Report.



8. The Department finds the historic maximum irrigated acreage to be 245 acres for 76G 126427 and 76G 126428.

9. *Flow Rate* – Statement of Claim No. 76G 126427 was decreed for adjudication purposes (Basin 76G Temporary Preliminary Decree) a flow rate of 5.0 CFS. Statement of Claim No. 76G 126428 was decreed a flow rate of 15.0 CFS. Applicants estimated the capacity of the ditch, using Manning's Equation, to be 14.9 CFS. Based on the Applicants' estimation method the historical ditch is capable of carrying the full decreed flow rate for 76G 126427 (5 CFS) and just under the full decreed flow rate for 76G 126428 (15 CFS). The ditch is not capable of carrying the combined decreed flow rate of both rights simultaneously (20 CFS). The total combined historical flow rate for both diversions is 14.9 CFS, based on ditch capacity. Water right records; Application; Department Technical Report.

10. *Consumptive Volume* – Applicants propose to use the Department's rules (ARM 36.12.1902) to determine historical consumptive use for their flood irrigation. Pre-1973 irrigation consisted of two flood systems which used lateral ditches to spread water throughout the place of use. A portion of the place of use (45 acres) was irrigated via wild flood. Its efficiency is estimated to be 25%. The remaining 200 acres were irrigated using a contour ditching system and is estimated to be 45% efficient. Application; Department Technical Report.

11. The places of use for both rights proposed to be changed overlap completely. The Department calculated the combined consumed volume based on its administrative rule. The historic consumptive volume associated with Applicants' 245 irrigated acres is calculated to be 234.7 AF, including estimates for crop consumption and irrecoverable losses (a summary of the volume is noted in the table below). ARM 36.12.1902.

TABLE 2: HISTORIC FLOOD IRRIGATION FOR STATEMENTS OF CLAIM NOS. 76G 126427 & 76G 126428 (COMBINED HISTORIC CONSUMPTIVE VOLUME)

Historic Consumptive Volume (HCV) Flood	Powell County Flood ET (Inches)	Powell County 1964-1973 Management Factor (Percent)	Historic Acres	HCV AF (minus IL)	On-farm Efficiency	Field Application AF	Historic Irrecoverable Losses (IL) Flood 5%:	HCV AF (Including IL)
Wild Flood Acres	13.14	77.6%	45	38.2	25%	152.9	7.6	45.9
Contour Ditch Acres	13.14	77.6%	200	169.9	45%	377.7	18.9	188.8
							Total HCV (AF)	234.7

The historical consumptive volume for the two types of flood irrigation is the cumulative combined volume associated with the two supplemental claims involved in this proceeding. During a phone call on September 30, 2021, the Applicants' consultant clarified that appropriations under junior claim no. 76G 126428 start a month earlier and water use begins at that time in dry years when it is available in the source. Depending on hydrologic conditions, the two water rights have been exercised differently from year-to-year and the junior claim can generally only be used during the first half of the season in a good water year. Although the majority of water can be associated to senior claim no. 76G 126427, the junior claim has been used for the early part of the season and assigning one month of the consumed and diverted volumes within the seven month season is a reasonable representation of use in any given year. The Department finds the consumed volume to be 201.2 AF associated with Statement of Claim No. 76G 126427 and 33.5 AF associated with Statement of Claim No. 76G 126428.

12. *Diverted Volume* – Diverted volume is calculated using a method developed by Department Hydrologists, Mike Roberts and James Heffner. Memorandum - Development of Standardized Methodologies to Determine Historic Diverted Volume, Sept. 2012.

13. The methodology was used to calculate volume for the Applicants' places of use, consisting of 245 acres. Applicants' historical irrigation includes an open ditch to convey water to the irrigated places of use. Diverted volume is calculated by the following: crop consumptive volume (Table 2 above) divided by the on-farm efficiency (percent of the water delivered to the field that is used by the crop), plus ditch losses (ditch seepage, vegetation losses, and ditch evaporation). Input parameters to the following table were based on the aforementioned memorandum, Web Soil Survey, ArcMap measurements, and information from the Applicants.

The Department finds the diverted volume to be 758.1 AF associated with Statement of Claim No. 76G 126427 and 126.3 AF associated with Statement of Claim No. 76G 126428, for a combined diversion of 884.4 AF. Application; Department Technical Report; September 30 Department Memo, Typical Water Use for Each Claim Being Changed.

TABLE 3: HISTORIC FLOOD IRRIGATION FOR STATEMENTS OF CLAIM NOS. 76G 126427 & 76G 126428 (COMBINED DIVERTED VOLUME)

Historic Diverted Volume (HDV)	Field Application (AF)		Seasonal Conveyance Loss Volume (seepage loss + vegetation loss + ditch evaporation)	HDV (AF)	
Wild flood	152.9		353.6	884.4	
Contour Ditch (6% slopes)	377.7				
<i>Seepage Loss:</i>	Ditch Wetted Perimeter (Feet)	Ditch Length (Feet)	Ditch Loss Rate (ft3/ft2/day)	Days Irrigated	Seepage Loss (/43560)
	7.5	7360	1.2	192	292.0
<i>Vegetation Loss:</i>	% loss/mile	Est. Flow Rate (CFS)=	Days Irrigated	ditch length (miles)	Vegetation Loss (*2)
	0.0075	14.9	192	1.4	59.8
<i>Ditch Evaporation:</i>	Ditch Width (Feet)	Ditch Length (Feet)	Annual Evaporation (Potts)	Period Adjusted Evaporation	Ditch Evaporation (/43560)
	4.0	7360	3.35	3.06	2.1

* Flow Rate is limited by ditch capacity.

14. *Period of Diversion/Use* - Statement of Claim No. 76G 126427 was decreed with a period of use of April 15 through October 15. Statement of Claim No. 76G 126428 was decreed with a period of use of March 15 through July 15. Applicants have utilized the water rights for irrigation for many years and periods of diversion and use have varied depending on flow conditions in the source. The U.S. Department of Agriculture Irrigation Climatic Area guidelines for the project location (Climatic Area 4) show a standard growing season range of April 20 through October 10.

The senior right's use begins only five days before the growing season date range, but the junior right's use begins over a month prior to the date range. Applicants assert that the priority date for 76G 126428 is relatively junior on the source and its early-season use is cut off once it falls out of priority. Applicants also assert that 76G 126427 isn't a particularly senior right on the source either; it can only be used after 26 more senior rights are satisfied. Because of this, it is plausible that operation of both rights begin early in the irrigation season while they are still in priority and water demands on the source are low. The Department finds that the combined period of March 15 through October 15 is representative of historical use. Application; Applicants' Deficiency Response dated February 11, 2021.

15. *Historic Use of Statements of Claim Nos. 76G 126427 and 76G 126428* – The following table displays the Department's findings for the historical use (flood irrigation) of the water rights to be changed.

Water Right No.	Flow Rate (CFS)	Diverted Volume (AF)	Consumed Volume (AF)	Period of Use	Place of Use	Priority Date	Source
76G 126427	5	758.1	201.2	April 15 to October 15	245 Ac	April 5, 1886	Cottonwood Creek
76G 126428	14.9	126.3	33.5	March 15 to July 15		March 3, 1906	

FINDINGS OF FACT – Adverse Effect

16. *General* - Applicants propose to change their point of diversion (POD) for Statement of Claim Nos. 76G 126427 and 76G 126428 from the Cowan Ditch headgate to the Stejer Ditch headgate, which is approximately 2,000 feet upstream. Conveyance to the places of use will change from an open ditch to a buried pipeline.³ The place of use is proposed to be changed/reconfigured from 245 historical acres to 302 acres, including a method change in irrigation from flood to center pivot (three pivots). Application.

17. *Adverse Effect Plan* - The first prong of the Applicants' plan to prevent adverse effects is to measure their diversions for the pivot systems with in-line flow meters. They will follow the law of priorities on the stream by complying with distribution as directed by water commissioners

³ The proposed change in point of diversion 2,000 feet upstream (from the Cowan Ditch to the Stejer Ditch) will allow the Applicants to supply two of their three center pivots under gravity flow pressure. The change will alleviate mechanical pumping costs associated with the alternative.

under district court order. Applicants' Deficiency Response dated February 11, 2021; Department Technical Report.

18. The second prong of the Applicants' plan is to enter an agreement for use of the Stejer Ditch with another party that uses the ditch for their own, existing water right appropriations. William and Sharon Applegate currently appropriate water from the Stejer Ditch to service two water rights (76G 44357 and 76G 211354). The combined flow rate of the Applegate's two water rights is 3.75 CFS. The combined flow rate of the water rights proposed by the Applicants to move to the Stejer Ditch (under their planned center pivot systems) is 5.17 CFS. The agreement between the two parties is to install a pipeline that will fully service the combined appropriations of all water rights associated with the Stejer Ditch. The new pipeline will have a capacity of 9.0 CFS, which will accommodate the combined flow rate of 8.92 CFS for all water rights diverted at the headgate and pipeline system ($3.75 \text{ CFS} + 5.17 \text{ CFS} = 8.92 \text{ CFS}$). A copy of the agreement is in the application file. Applicants' Deficiency Response dated February 11, 2021.

19. *Flow Rate* – The combined, historical flow rate of the flood irrigation systems associated with the two water rights proposed for change is 14.9 CFS. The flow rate of the center pivot systems proposed under future appropriations is 5.17 CFS. The proposed change will result in a reduction in diverted flow rate of 9.7 CFS ($14.9 \text{ CFS} - 5.17 \text{ CFS} = 9.7 \text{ CFS}$). Application; Department Technical Report.

20. *Diverted and Consumed Volume* – The Department calculated historic volume using its administrative rules and standard methodology. Department Memorandum - Development of standardized methodologies to determine Historic Diverted Volume, Sept. 2012. The combined, historical diverted volume of the two water rights proposed to be changed is 884.4 AF and the consumed volume is 234.7 AF. Finding of Fact Nos. 10-13 and 15. The combined, proposed diverted volume under the planned center pivot operation is 271.4 AF and the consumed volume is estimated to remain the same as historically (234.7 AF).⁴ Under the plan for future use, diverted volume will be reduced by 613 AF ($884.4 \text{ AF} - 271.4 \text{ AF} = 613 \text{ AF}$), and there will be no increase in water consumption. ARM 36.12.1902; Application; Department Technical Report.

⁴ Under the proposed plan, the acreage irrigated will increase from 245 acres to 302 acres (conversion from flood to sprinkler irrigation), but the consumed volume will remain the same. The per-acre volume allocation will be reduced to compensate for an increase in irrigated acreage.

21. *Period of Diversion/Use* - The period of diversion/use will remain unchanged and the Department will require Applicants to record appropriations, including the period of diversion/use, and submit records. Application; Conditions Section.

22. *Return Flows* - The change in irrigation method from flood to sprinkler will result in an alteration of return flows. Less water will be diverted and applied under the proposed center pivot systems than the historical flood irrigation systems. The proposed center pivots will be more effective in managing water within the crop root zone, resulting in less return flows than historically.

23. Generally, when an appropriation right(s) is changed an analysis is undertaken to determine if all water sources and stream reaches that historically received return flows will continue accruing them under the changed condition. Here, due to the proximity of the existing places of use to two sources, Cottonwood Creek and Reece Anderson Creek, historical return flows accrued to both streams. Under the change proposal, including a reconfiguration of the place of use, return flows will be reduced in each stream. Therefore, a monthly analysis will occur for impacts to Reece Anderson Creek because return flows will be reduced and the Applicant is not able to meet specific criteria related to the Department's return flow policy. In such an instance the Department conducts a detailed monthly evaluation of the alteration of return flows for potential adverse effects to the stream that is not the original source of supply. For purposes of this Preliminary Determination, and per Department policy, a monthly analysis will not be conducted for Cottonwood Creek because return flows will enter back into that source (the source of origin for appropriations) prior to or at the location of the next appropriator, or the historically-diverted water that will be left instream after the change remains available during the period of diversion either below the point of diversion or where return flows accrued to that source. Department Policy Memorandum on Return Flows, April 1, 2016.

24. Department Groundwater Hydrologist Melissa Schaar generated a return flow report to inform this Preliminary Determination. Ms. Schaar's report contains tables showing the estimation of monthly return flows to Cottonwood Creek and Reece Anderson Creek, before and after the proposed change in irrigation methods. As stated in Finding of Fact No. 23, for purposes of this Preliminary Determination, the Department will only assess the monthly impacts to Reece Anderson Creek. Additionally, after Ms. Schaar issued her report, errors were discovered in the report that affected the return flow values because of limitations associated with the historical consumptive use. Department Hydrologist Doug Mann issued a correction

memo amending Ms. Schaar's return flow values. Mr. Mann's corrected values are used as the basis for analyzing return flows in this Preliminary Determination.⁵ Department Memorandum, Amended Return Flow Analysis based on Historical Consumptive Use, dated September 27, 2021.

25. The Department prepared two return flow analyses. Ms. Schaar's analysis contained errors that affected the historical field application volume. The analysis incorrectly averaged field efficiencies of both historic flood systems and did not limit the diverted and consumed volumes to the Applicants' historical use. The Department (Mr. Mann) then conducted a more detailed analysis for each field by distinguishing efficiencies based on flood irrigation type and limiting diverted and consumed volumes to the Applicants' historic use. Applicants are not proposing to increase irrigation diversions, as assumed in the first analyses, but rather, to hold their consumptive use associated with historic flood irrigation to the proposed 302 acres of pivot irrigation. The second analysis more accurately represents the Applicants' proposal and their past and proposed water uses. Results of the second analysis is contained in Tables 4 and 5 (below) and shows the monthly return flows to both sources due to the net effects of converting 55 acres of flood irrigation to pivot irrigation. Only the 55 acres of historical flood irrigation are considered under the analysis because they lie outside the place of use proposed for pivot irrigation. The amount of water not consumed is the difference between the amount of water consumed and the amount of water applied to a field.

⁵ After Ms. Schaar issued her return flow report, she left employment with the Department. Therefore, Department Hydrologist Mann issued his correction memo because Ms. Schaar was no longer available. The report was peer reviewed by Attila Felnagy, Department Groundwater Hydrologist.

TABLE 4: WATER USE AND RETURN FLOWS FOR THE HISTORIC FLOOD IRRIGATION OF 55 ACRES.

Month	NIR (inches)	Historic Applied (AF)	Historic Consumed (AF)	Historic Non- Consumed (AF)	Return Flows (AF)	
					Cottonwood Creek	Reese Anderson Creek
January	0.0	0.0	0.0	0.0	---	1.1
February	0.0	0.0	0.0	0.0		1.0
March	0.0	0.0	0.0	0.0		0.9
April	0.0	0.0	0.0	0.0		0.8
May	0.0	0.0	0.0	0.0		0.7
June	3.0	50.5	16.3	34.2		1.4
July	4.1	69.1	22.2	46.9		3.0
August	3.1	52.2	16.8	35.4		3.9
September	0.0	0.0	0.0	0.0		3.5
October	0.0	0.0	0.0	0.0		2.2
November	0.0	0.0	0.0	0.0		1.6
December	0.0	0.0	0.0	0.0		1.3
Totals	10.2	171.8	55.3	116.5	95.2	21.3

TABLE 5: WATER USE AND RETURN FLOWS FOR THE PROPOSED PIVOT IRRIGATION BASED ON THE WATER AVAILABLE FROM CONVERTING 55 ACRES OF HISTORICAL FLOOD IRRIGATION.

Month	NIR (inches)	Proposed Applied (AF)	Proposed Consumed (AF)	Proposed Non- Consumed (AF)	Return Flows (AF)	
					Cottonwood Creek	Reese Anderson Creek
January	0.0	0.0	0.0	0.0	--	0.2
February	0.0	0.0	0.0	0.0		0.1
March	0.0	0.0	0.0	0.0		0.1
April	0.0	0.0	0.0	0.0		0.1
May	0.6	2.4	2.1	0.3		0.1
June	4.3	17.2	15.5	1.7		0.1
July	5.5	22	19.8	2.2		0.2
August	4.7	18.8	16.9	1.9		0.3
September	0.3	1.1	1	0.1		0.3
October	0.0	0.0	0.0	0.0		0.3
November	0.0	0.0	0.0	0.0		0.2
December	0.0	0.0	0.0	0.0		0.2
Totals	15.3	61.5	55.3	6.2	4.0	2.2

Table 6, below, shows the difference in return flows to Reece Anderson Creek when 55 acres of historical flood irrigation is converted to center pivot irrigation using the same consumptive use.

TABLE 6: MODEL SIMULATED RETURN FLOWS IN REESE ANDERSON CREEK FOR HISTORICAL FLOOD IRRIGATION BEING CONVERTED TO PIVOT ACRES BY CHANGE APPLICATION # 76G 30149275.

Month	Reese Anderson Creek (Flood Returns)	Reese Anderson Creek (Pivot Returns)
January	1.1	0.2
February	1.0	0.1
March	0.9	0.1
April	0.8	0.1
May	0.7	0.1
June	1.4	0.1
July	3.0	0.2
August	3.9	0.3
September	3.5	0.3
October	2.2	0.3
November	1.6	0.2
December	1.3	0.2
Total	21.3	2.2

After converting to pivot irrigation, the Applicant will reduce diversions and leave water that was previously diverted in Cottonwood Creek during the period of use. The return flows involving Cottonwood Creek and Reese Anderson Creek will change as a result of the proposed modification to the method of irrigation and reconfiguration of the underlying water rights' places of use.

26. Return flows under the proposed change will reduce the amount of water returning to Reese Anderson Creek. The only water rights existing within the impacted reach of stream are two instream stock direct rights, owned by the very same water users in this matter, for watering 745 animal units. At a standard volume of 30 gallons per day per animal unit the total volume is 25.0 AF annually. Water right records.

27. To assess the capacity of Reese Anderson Creek to supply sufficient stock water to the Applicants' water rights, the Department calculated basin yield at the point where the disruption of return flows is projected to occur. The Department used the USGS StreamStats program to calculate yield. The estimation technique resulted in a mean annual flow rate of 0.161 CFS and a mean annual volume of 116.9 AF. The median annual volume is sufficient to supply 25.0 AF for stock water purposes. The Applicants can manage their stock watering practices accordingly to meet their needs. Results of the StreamStats estimation technique are included in the file.

28. Return flows under the proposed change will enter back into Cottonwood Creek prior to the next appropriator, and any non-consumed water that was historically diverted will now be left instream and available for other appropriators during the period of diversion below the point where return flows accrued. This will help ensure downstream water users in Cottonwood Creek have similar or greater opportunity to appropriate water than they historically did during the period of diversion. For purposes of Cottonwood Creek, the Department's return flow policy directs no further detailed analysis be undertaken on that source. Finding of Fact No. 23. If any other water right holder believes they will be adversely affected by a change in the timing and amount of return flows in Cottonwood Creek, they may file an objection to the proposed project and further analysis will be conducted. Department Policy Memorandum on Return Flows, April 1, 2016.

29. *Associated Water Rights* - The following water rights are considered for adverse effect because they use the Cowan Ditch to convey irrigation water.

TABLE 7: OTHER WATER RIGHTS LISTING THE COWAN DITCH AS A POINT OF DIVERSION

Water Right Number	Owners	Type of Right	Priority Date
76G 90409 00	APPLEGATE, WILLIAM	STATEMENT OF CLAIM	09/01/1865
76G 90411 00	APPLEGATE, WILLIAM	STATEMENT OF CLAIM	04/01/1870
76G 90412 00	APPLEGATE, WILLIAM	STATEMENT OF CLAIM	06/01/1874

76G 90413 00	APPEGATE, WILLIAM	STATEMENT OF CLAIM	04/01/1880
76G 90414 00	APPEGATE, WILLIAM	STATEMENT OF CLAIM	04/01/1888
76G 90393 00	APPEGATE, WILLIAM COLTER, ANTHONY/PATTI DAVIES, LUCAS MERRILL, MELISSA MCQUEARY, TROY/RIKKI SUN UP VENTURES LLC	STATEMENT OF CLAIM	03/03/1906

The Cowan Ditch is used to convey appropriations under the Applicants' two water rights to the historic place of use. There are six other irrigation rights that identify the Cowan Ditch as a point of diversion (Table 7 above), and those rights have two or three additional diversions that can be used to manage appropriations. Applicants assert that the six additional rights claimed to be appropriated from the Cowan Ditch cannot supply the six other irrigation rights' claimed places of use. The places of use in Sections 1, 2, 3, and 12 in 7N 9W cannot be served by the Cowan Ditch headgate located in the SWNWSW Sec 9 in 7N 8W. Therefore, Applicants assert, discontinuing use of the Cowan Ditch will not result in a disruption of conveyance water for those water rights, and will not result in adverse effect. (Applicant Clarification Letter received August 25, 2021) This information is consistent with the Department's review of the Powell County Water Resource Survey, 1947 aerial photograph, 1979 USDA aerial photograph, and modern aerial imagery taken in 2017. The Powell County Water Resource Survey (pictured below) does not show the Cowan Ditch extending past Reese Anderson Creek and into Sections 1, 2, 3, and 12. The 1947, 1979, and 2017 aerial photographs do not support the Cowan Ditch extending past Reese Anderson Creek either. Based on the Department's assessment of these resources, it agrees with the Applicants' assertions. The Department finds there will be no adverse effects to the six water rights claiming to use the Cowan Ditch to supply places of use in Sections 1, 2, 3, and 12.

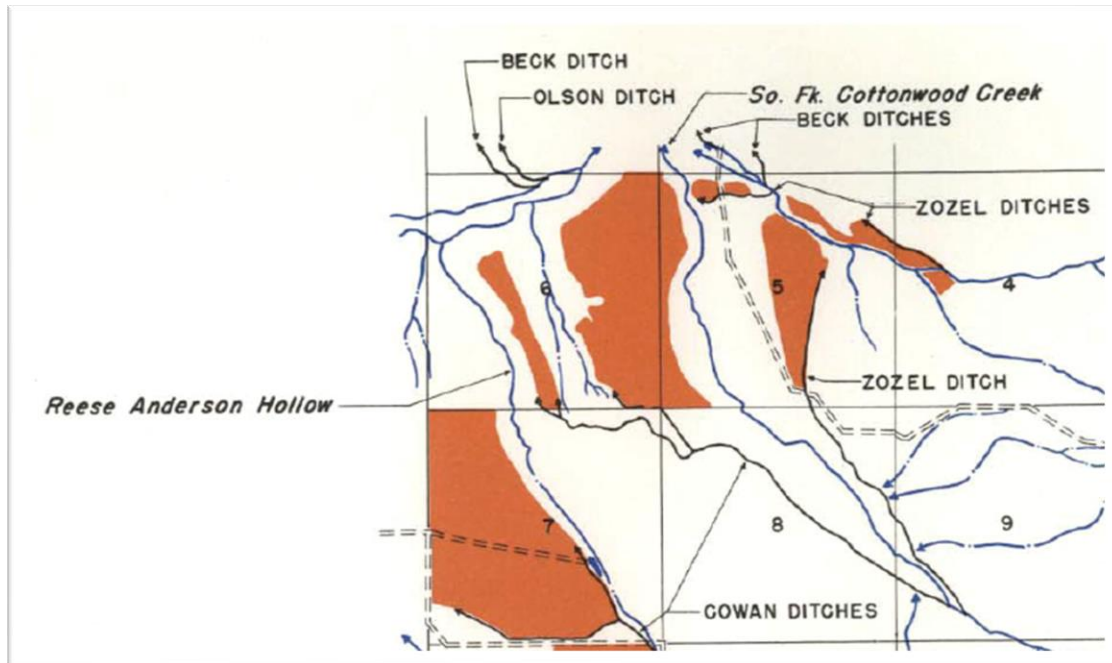


Figure 1: Segment of the published Powell County Water Resource Survey map illustrating the Cowan Ditch diversion originating in the SWNWSW of Sec 9 Twp 7N Rge 8W and depicting its historic footprint passing through Sec 5, 6, 7, and 8 in Twp 7N Rge 8W.

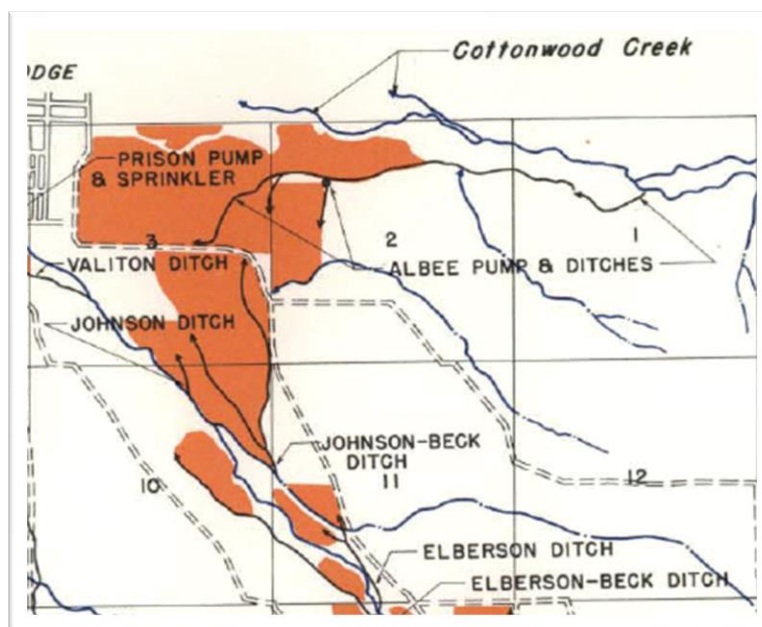


Figure 2: Segment of the published Powell County Water Resource Survey map containing Sec 1, 2, 11, and 12 in Twp 7N Rge 9W. As illustrated, the Cowan Ditch is not depicted crossing Reese Anderson Coulee into Sec 1, 2, 11, or 12.

30. *Water Rights Between the Stejer Ditch and Cowan Ditch* - The following water rights are considered for adverse effect because they have points of diversion located within the reach of Cottonwood Creek between the Applicants' historical diversion (Cowan Ditch) and their proposed diversion (Stejer Ditch), including projected appropriations from the Stejer Ditch. Another ditch, the Gates Ditch⁶, is situated between the Cowan and the Stejer ditches.

TABLE 8: OTHER WATER RIGHTS WHICH HAVE POINTS OF DIVERSION BETWEEN AND INCLUDING THE COWAN AND STEJER DITCHES

Water Right Number	Owners	Type of Right	Description
76G 30130230	APPLEGATE, WILLIAM/SHARON	STATEMENT OF CLAIM	STOCK – INSTREAM
76G 44357 00	APPLEGATE, WILLIAM/SHARON	STATEMENT OF CLAIM	IRRIGATION USING GATES (& STEJER) DITCH
76G 211354 00	APPLEGATE, WILLIAM/SHARON AND LUPHER, SHARON, AND ARAGON, ELAINA	STATEMENT OF CLAIM	IRRIGATION USING GATES (& STEJER) DITCH

Under the Applicants proposal, less water will be diverted from the source than was historically diverted under the flood irrigation system, and no more water will be consumed than historically. Water not diverted by the new sprinkler system will remain instream and be available for appropriation by other water users, therefore there will be no adverse effects to the water users situated between the Cowan and Stejer Ditches. Additionally, the Applicants' February 9, 2021 deficiency response indicates the Applegates and the Applicants have entered an agreement to use the proposed new pipeline to convey irrigation water for all water rights to be diverted from the Stejer Ditch. The capacity of the pipeline is sufficient to convey all combinations of water rights for the two parties. After the initial appropriation of water into the pipeline, the pipeline will emerge on the Applegates' irrigated field beginning in the SW corner of Sec 5. Water will be discharged from the pipeline into their existing earthen ditch. The Department finds there will be no adverse effects to the two water rights owned by the Applegates using the same diversion structure. Application; Applicants' Deficiency Response dated February 11, 2021; Department Technical Report.

⁶ Also known as the Zozel Ditch.

31. As part of their plan to prevent adverse effects, the Applicants will measure appropriations and comply with the District Court-enforced water distribution project on Cottonwood Creek. Accordingly, the Department imposes a condition of water measurement, including recordation of appropriations, in this Preliminary Determination. Applicants' Deficiency Response dated February 9, 2021.

32. Under the conditions (listed below) imposed in this determination, the Department finds the proposed change will not adversely affect the use of existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued.

CONDITIONS

IN THE MATTER OF APPLICATION TO CHANGE A WATER RIGHT NO. 76G 30149275 THE DEPARTMENT FINDS THE FOLLOWING CONDITIONS ARE NECESSARY TO MEET THE STATUTORY CRITERIA FOR CHANGES OF WATER RIGHT SET FORTH AT § 85-2-402, MCA AND ALLOW FOR ISSUANCE OF THE CHANGE AUTHORIZATION:

****WATER MEASUREMENT RECORDS REQUIRED**

THE APPROPRIATORS SHALL INSTALL A MEASURING DEVICE IN THE CONVEYANCE FACILITY AS NEAR AS PRACTICAL TO THE HEADGATE ON THE SOURCE, IN ORDER TO MEASURE APPROPRIATIONS. THE TYPE AND LOCATION OF THE DEVICE MUST BE APPROVED BY THE DEPARTMENT. THE APPROPRIATOR SHALL KEEP A WRITTEN RECORD OF THE FLOW RATE AND VOLUME OF WATER DIVERTED, INCLUDING THE PERIOD OF TIME OF DIVERSION. RECORDS MUST ACCOUNT SEPARATELY FOR ANY APPROPRIATIONS UNDER THIS AUTHORIZATION FROM APPROPRIATIONS UNDER ANY OTHER WATER RIGHT USING THE SAME DIVERSION WORKS AND CONVEYANCE FACILITY. RECORDS SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. FAILURE TO SUBMIT REPORTS AS REQUIRED BY THESE CONDITIONS MAY BE CAUSE FOR REVOCATION OF THE PERMIT. THE RECORDS MUST BE SENT TO THE HELENA WATER RESOURCES REGIONAL OFFICE AT THE ADDRESS BELOW. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING/MONITORING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE ACCURATELY DURING PERIODS OF APPROPRIATION.

SUBMIT RECORDS TO:
HELENA WATER RESOURCES OFFICE
1424 NINTH AVENUE
HELENA, MT 59620-1601
PHONE: 406-444-6999

BENEFICIAL USE

FINDINGS OF FACT

33. Applicants propose to use water for irrigation of agricultural crops. Irrigation is identified as a beneficial use of water in § 85-2-102(4)(a), MCA.

34. The proposed appropriation includes a diversion of up to 5.17 CFS at the Stejer Ditch headgate. Information provided by the Applicants show the northernmost pivot needs 1.34 CFS to operate, the middle pivot needs 2.05 CFS, and the southernmost pivot needs 1.78 CFS for a total combined flow rate of 5.17 CFS. (Flow Rate Clarification email, dated May 20, 2021) Diversions will cease from the Cowan Ditch. A flow rate of 5.17 CFS applied on 302 acres results in per-acre allocation of approximately 7.68 gallons per minute per acre. The per acre allocation is reasonable for center pivot irrigation in Montana.

35. The proposed diverted volume is 271.4 AF, or a per-acre allocation of 0.9 AF. The per acre allocation is low when compared to other like-systems, however a portion of the irrigated place of use overlaps with another water right (76G 4523) which is involved in a concurrent change application. The concurrent change application, if granted, will also contribute some volume to a portion of overlapping acreage (southernmost pivot) involved in the proposed three-pivot sprinkler irrigation system. The place of use will be reconfigured from 245 acres of historically flood-irrigated fields to 302 acres of sprinkler irrigation involving three center pivots. The consumed volume of water that will benefit crops under the new pivot will not change. The diverted volume conforms to historical use, which was calculated by the Department based on administrative rule, industry-referenced efficiency, and a Department policy memo titled "Development of standardized methodologies to determine Historic Diverted Volume" dated September 13, 2012. Application; ARM 36.12.1902(16); Department Technical Report. Applicant intends on growing agricultural crops.

36. The Department finds the proposed flow rate and volume to be a beneficial use of water.

ADEQUATE DIVERSION

FINDINGS OF FACT

37. Applicants' water rights will be appropriated from Cottonwood Creek at the Stejer Ditch headgate, located in the NESWSW Sec 8, T7N, R8W. A pipeline buried in the footprint of the Stejer Ditch will convey water to the places of use (two partial pivots in the SESESE Sec 31

T8N, R8W and E2 Sec 6 T7N, R8W, and one full pivot in the E2NE Sec 7 and W2NW Sec 8 in T7N, R8W). The proposed flow rate to be diverted is 5.17 CFS.

38. The diversion facilities include a headgate, fish screen, fish return conveyance, measurement weir (or flume), and pipeline to the center pivots. An adjustable headgate will control water flow from the creek into the diversion facilities. The proposed pipeline is 24-inches in diameter with a 9 CFS capacity.⁷ The pipeline will serve as a gravity-fed conveyance system for the North and Middle Pivots. The South Pivot will operate with a booster pump. Application; Department Technical Report.

39. In this preliminary determination a condition of water measurement has been imposed, so that the Applicants can monitor and limit appropriations to 5.17 CFS. See Conditions Section below.

40. The Department finds the proposed means of diversion, new conveyance method, construction, and operation of the new diversion works are adequate for the proposed beneficial use.

POSSESSORY INTEREST

FINDINGS OF FACT

41. The Applicants signed the affidavit on the application form affirming they have possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. Application.

CONCLUSIONS OF LAW

HISTORIC USE AND ADVERSE EFFECT

42. Montana's change statute codifies the fundamental principles of the Prior Appropriation Doctrine. Sections 85-2-401 and -402(1)(a), MCA, authorize changes to existing water rights, permits, and water reservations subject to the fundamental tenet of Montana water law that one may change only that to which he or she has the right based upon beneficial use. A change to an existing water right may not expand the consumptive use of the underlying right or remove the well-established limit of the appropriator's right to water actually taken and beneficially used. An

⁷ The Stejer Ditch pipeline will be used by the Applicants and the Applegates to supply water to each parties' respective irrigation systems. The pipeline is designed to carry the combination of flow rates for all water rights exercised from the Stejer Ditch.

increase in consumptive use constitutes a new appropriation and is subject to the new water use permit requirements of the MWUA. McDonald v. State, 220 Mont. 519, 530, 722 P.2d 598, 605 (1986)(beneficial use constitutes the basis, measure, and limit of a water right); Featherman v. Hennessy, 43 Mont. 310, 316-17, 115 P. 983, 986 (1911)(increased consumption associated with expanded use of underlying right amounted to new appropriation rather than change in use); Quigley v. McIntosh, 110 Mont. 495, 103 P.2d 1067, 1072-74 (1940)(appropriator may not expand a water right through the guise of a change – expanded use constitutes a new use with a new priority date junior to intervening water uses); Allen v. Petrick, 69 Mont. 373, 222 P. 451(1924)(“quantity of water which may be claimed lawfully under a prior appropriation is limited to that quantity within the amount claimed which the appropriator has needed, and which within a reasonable time he has actually and economically applied to a beneficial use. . . . it may be said that the principle of beneficial use is the one of paramount importance . . . The appropriator does not own the water. He has a right of ownership in its use only”); Town of Manhattan, at ¶ 10 (an appropriator’s right only attaches to the amount of water actually taken and beneficially applied); Town of Manhattan v. DNRC, Cause No. DV-09-872C, Montana Eighteenth Judicial District Court, *Order Re Petition for Judicial Review*, Pg. 9 (2011)(the rule that one may change only that to which it has a right is a fundamental tenet of Montana water law and imperative to MWUA change provisions); In the Matter of Application to Change a Water Right No. 41I 30002512 by Brewer Land Co, LLC, DNRC Proposal For Decision and Final Order (2004).⁸

43. Sections 85-2-401(1) and -402(2)(a), MCA, codify the prior appropriation principles that Montana appropriators have a vested right to maintain surface and ground water conditions substantially as they existed at the time of their appropriation; subsequent appropriators may insist that prior appropriators confine their use to what was actually appropriated or necessary for their originally intended purpose of use; and, an appropriator may not change or alter its use in a manner that adversely affects another water user. Spokane Ranch & Water Co. v. Beatty, 37 Mont. 342, 96 P. 727, 731 (1908); Quigley, 110 Mont. at 505-11, 103 P.2d at 1072-74; Matter of

⁸ DNRC decisions are available at:
http://www.dnrc.mt.gov/wrd/water_rts/hearing_info/hearing_orders/hearingorders.asp

Royston, 249 Mont. at 429, 816 P.2d at 1057; Hohenlohe, at ¶¶43-45.⁹

44. The cornerstone of evaluating potential adverse effect to other appropriators is the determination of the “historic use” of the water right being changed. Town of Manhattan, at ¶10 (recognizing that the Department’s obligation to ensure that change will not adversely affect other water rights requires analysis of the actual historic amount, pattern, and means of water use). A change applicant must prove the extent and pattern of use for the underlying right proposed for change through evidence of the historic diverted amount, consumed amount, place of use, pattern of use, and return flow because a statement of claim, permit, or decree may not include the beneficial use information necessary to evaluate the amount of water available for change or potential for adverse effect.¹⁰ A comparative analysis of the historic use of the water right to the proposed change in use is necessary to prove the change will not result in expansion of the original right, or adversely affect water users who are entitled to rely upon maintenance of conditions on the source of supply for their water rights. Quigley, 103 P.2d at 1072-75 (it is necessary to ascertain historic use of a decreed water right to determine whether a change in use expands the underlying right to the detriment of other water user because a decree only provides a limited description of the right); Royston, 249 Mont. at 431-32, 816 P.2d at 1059-60 (record could not sustain a conclusion of no adverse effect because the applicant failed to provide the Department with evidence of the historic diverted volume, consumption, and return flow); Hohenlohe, at ¶44-45; Town of Manhattan v. DNRC, Cause No. DV-09-872C, Montana Eighteenth Judicial District Court, *Order Re Petition for Judicial Review*, Pgs. 11-12 (proof of historic use is required even when the right has been decreed because the decreed flow rate or volume establishes the maximum appropriation that may be diverted, and may exceed the historical pattern of use, amount diverted or amount consumed through actual use); Matter of

⁹ See also Holmstrom Land Co., Inc., v. Newlan Creek Water District, 185 Mont. 409, 605 P.2d 1060 (1979); Lokowich v. Helena, 46 Mont. 575, 129 P. 1063(1913); Thompson v. Harvey, 164 Mont. 133, 519 P.2d 963 (1974)(plaintiff could not change his diversion to a point upstream of the defendants because of the injury resulting to the defendants); McIntosh v. Graveley, 159 Mont. 72, 495 P.2d 186 (1972)(appropriator was entitled to move his point of diversion downstream, so long as he installed measuring devices to ensure that he took no more than would have been available at his original point of diversion); Head v. Hale, 38 Mont. 302, 100 P. 222 (1909)(successors of the appropriator of water appropriated for placer mining purposes cannot so change its use as to deprive lower appropriators of their rights, already acquired, in the use of it for irrigating purposes); and, Gassert v. Noyes, 18 Mont. 216, 44 P. 959(1896)(change in place of use was unlawful where reduced the amount of water in the source of supply available which was subject to plaintiff’s subsequent right).

¹⁰A claim only constitutes *prima facie* evidence for the purposes of the adjudication under § 85-2-221, MCA. The claim does not constitute *prima facie* evidence of historical use in a change proceeding under §85-2-402, MCA. For example, most water rights decreed for irrigation are not decreed with a volume and provide limited evidence of actual historic beneficial use. §85-2-234, MCA

Application For Beneficial Water Use Permit By City of Bozeman, Memorandum, Pgs. 8-22 (Adopted by DNRC *Final Order* January 9, 1985)(evidence of historic use must be compared to the proposed change in use to give effect to the implied limitations read into every decreed right that an appropriator has no right to expand his appropriation or change his use to the detriment of juniors).¹¹

45. An applicant must also analyze the extent to which a proposed change may alter historic return flows for purposes of establishing that the proposed change will not result in adverse effect. The requisite return flow analysis reflects the fundamental tenant of Montana water law that once water leaves the control of the original appropriator, the original appropriator has no right to its use and the water is subject to appropriation by others. E.g., Hohenlohe, at ¶44; Rock Creek Ditch & Flume Co. v. Miller, 93 Mont. 248, 17 P.2d 1074, 1077 (1933); Newton v. Weiler, 87 Mont. 164, 286 P. 133(1930); Popham v. Holloron, 84 Mont. 442, 275 P. 1099, 1102 (1929); Galiger v. McNulty, 80 Mont. 339, 260 P. 401 (1927); Head v. Hale, 38 Mont. 302, 100 P. 222 (1909); Spokane Ranch & Water Co., 37 Mont. at 351-52, 96 P. at 731; Hidden Hollow Ranch v. Fields, 2004 MT 153, 321 Mont. 505, 92 P.3d 1185; In the Matter of Application for Change Authorization No. G (W)028708-411 by Hedrich/Straugh/Ringer, DNRC Final Order (Dec. 13, 1991); In the Matter of Application for Change Authorization No. G(W)008323-G76l By Starkel/Koester, DNRC Final Order (Apr. 1, 1992); In the Matter of Application to Change a Water Right No. 411 30002512

¹¹ Other western states likewise rely upon the doctrine of historic use as a critical component in evaluating changes in appropriation rights for expansion and adverse effect: Pueblo West Metropolitan District v. Southeastern Colorado Water Conservancy District, 717 P.2d 955, 959 (Colo. 1986)("[O]nce an appropriator exercises his or her privilege to change a water right ... the appropriator runs a real risk of requantification of the water right based on actual historical consumptive use. In such a change proceeding a junior water right ... which had been strictly administered throughout its existence would, in all probability, be reduced to a lesser quantity because of the relatively limited actual historic use of the right."); Santa Fe Trail Ranches Property Owners Ass'n v. Simpson, 990 P.2d 46, 55 -57 (Colo., 1999); Farmers Reservoir and Irr. Co. v. City of Golden, 44 P.3d 241, 245 (Colo. 2002)("We [Colorado Supreme Court] have stated time and again that the need for security and predictability in the prior appropriation system dictates that holders of vested water rights are entitled to the continuation of stream conditions as they existed at the time they first made their appropriation"); Application for Water Rights in Rio Grande County, 53 P.3d 1165, 1170 (Colo. 2002); Wyo. Stat. § 41-3-104 (When an owner of a water right wishes to change a water right ... he shall file a petition requesting permission to make such a change The change ... may be allowed provided that the quantity of water transferred ... shall not exceed the amount of water historically diverted under the existing use, nor increase the historic rate of diversion under the existing use, nor increase the historic amount consumptively used under the existing use, nor decrease the historic amount of return flow, nor in any manner injure other existing lawful appropriators.); Basin Elec. Power Co-op. v. State Bd. of Control, 578 P.2d 557, 564 -566 (Wyo, 1978) (a water right holder may not effect a change of use transferring more water than he had historically consumptively used; regardless of the lack of injury to other appropriators, the amount of water historically diverted under the existing use, the historic rate of diversion under the existing use, the historic amount consumptively used under the existing use, and the historic amount of return flow must be considered.)

by Brewer Land Co, LLC, DNRC Proposal For Decision and Final Order (2004); Admin. R.M. 36.12.101(56)(Return flow - that part of a diverted flow which is not consumed by the appropriator and returns underground to its original source or another source of water - is not part of a water right and is subject to appropriation by subsequent water users).¹²

46. Although the level of analysis may vary, analysis of the extent to which a proposed change may alter the amount, location, or timing return flows is critical in order to prove that the proposed change will not adversely affect other appropriators who rely on those return flows as part of the source of supply for their water rights. Royston, 249 Mont. at 431, 816 P.2d at 1059-60; Hohenlohe, at ¶¶ 45-6 and 55-6; Spokane Ranch & Water Co., 37 Mont. at 351-52, 96 P. at 731. Noted Montana Water Law scholar Al Stone explained that the water right holder who seeks to change a water right is unlikely to receive the full amount claimed or historically used at the original place of use due to reliance upon return flows by other water users. Montana Water Law, Albert W. Stone, Pgs. 112-17 (State Bar of Montana 1994).

47. In Royston, the Montana Supreme Court confirmed that an applicant is required to prove lack of adverse effect through comparison of the proposed change to the historic use, historic consumption, and historic return flows of the original right. 249 Mont. at 431, 816 P.2d at 1059-60. More recently, the Montana Supreme Court explained the relationship between the fundamental principles of historic beneficial use, return flow, and the rights of subsequent appropriators as they relate to the adverse effect analysis in a change proceeding in the following manner:

The question of adverse effect under §§ 85-2-402(2) and -408(3), MCA, implicates return flows. A change in the amount of return flow, or to the hydrogeologic pattern of return flow, has the potential to affect adversely downstream water rights. There consequently exists an inextricable link between the “amount historically consumed” and the water that re-enters the stream as return flow. . . .

An appropriator historically has been entitled to the greatest quantity of water he can put to use. The requirement that the use be both beneficial and reasonable, however, proscribes this tenet. This limitation springs from a fundamental tenet of western water law-that an appropriator has a right only to that amount of water historically put to beneficial use-developed in concert with the rationale that each subsequent appropriator “is entitled to have the water flow in the same manner as when he located,” and the appropriator may insist that prior appropriators do not

¹² The Montana Supreme Court recently recognized the fundamental nature of return flows to Montana’s water sources in addressing whether the Mitchell Slough was a perennial flowing stream, given the large amount of irrigation return flow which feeds the stream. The Court acknowledged that the Mitchell’s flows are fed by irrigation return flows available for appropriation. Bitterroot River Protective Ass’n, Inc. v. Bitterroot Conservation Dist. 2008 MT 377, ¶¶ 22, 31, 43, 346 Mont. 508, ¶¶ 22, 31,43, 198 P.3d 219, ¶¶ 22, 31,43(citing Hidden Hollow Ranch v. Fields, 2004 MT 153, 321 Mont. 505, 92 P.3d 1185).

affect adversely his rights.

This fundamental rule of Montana water law has dictated the Department's determinations in numerous prior change proceedings. The Department claims that historic consumptive use, as quantified in part by return flow analysis, represents a key element of proving historic beneficial use.

We do not dispute this interrelationship between historic consumptive use, return flow, and the amount of water to which an appropriator is entitled as limited by his past beneficial use.

Hohenlohe, at ¶¶ 42-45 (internal citations omitted).

48. The Department's rules reflect the above fundamental principles of Montana water law and are designed to itemize the type evidence and analysis required for an applicant to meet its burden of proof. Admin.R.M. 36.12.1901 through 1903. These rules forth specific evidence and analysis required to establish the parameters of historic use of the water right being changed. Admin.R.M. 36.12.1901 and 1902. The rules also outline the analysis required to establish a lack of adverse effect based upon a comparison of historic use of the water rights being changed to the proposed use under the changed conditions along with evaluation of the potential impacts of the change on other water users caused by changes in the amount, timing, or location of historic diversions and return flows. Admin.R.M. 36.12.1901 and 1903.

49. Applicant seeks to change existing water rights represented by its Water Right Claims. The "existing water rights" in this case are those as they existed prior to July 1, 1973, because with limited exception, no changes could have been made to those rights after that date without the Department's approval. Analysis of adverse effect in a change to an "existing water right" requires evaluation of what the water right looked like and how it was exercised prior to July 1, 1973. In McDonald v. State, the Montana Supreme Court explained:

The foregoing cases and many others serve to illustrate that what is preserved to owners of appropriated or decreed water rights by the provision of the 1972 Constitution is what the law has always contemplated in this state as the extent of a water right: such amount of water as, by pattern of use and means of use, the owners or their predecessors put to beneficial use. . . . the Water Use Act contemplates that all water rights, regardless of prior statements or claims as to amount, must nevertheless, to be recognized, pass the test of historical, unabandoned beneficial use. . . . To that extent only the 1972 constitutional recognition of water rights is effective and will be sustained.

220 Mont. at 529, 722 P.2d at 604; see also Matter of Clark Fork River Drainage Area, 254 Mont. 11, 17, 833 P.2d 1120 (1992).

50. Water Resources Surveys were authorized by the 1939 legislature. 1939 Mont. Laws Ch. 185, § 5. Since their completion, Water Resources Surveys have been invaluable evidence in water right disputes and have long been relied on by Montana courts. In re Adjudication of Existing Rights to Use of All Water in North End Subbasin of Bitterroot River Drainage Area in Ravalli and Missoula Counties, 295 Mont. 447, 453, 984 P.2d 151, 155 (1999)(Water Resources Survey used as evidence in adjudicating of water rights); Wareing v. Schreckendgust, 280 Mont. 196, 213, 930 P.2d 37, 47 (1996)(Water Resources Survey used as evidence in a prescriptive ditch easement case); Olsen v. McQueary, 212 Mont. 173, 180, 687 P.2d 712, 716 (1984) (judicial notice taken of Water Resources Survey in water right dispute concerning branches of a creek).

51. While evidence may be provided that a particular parcel was irrigated, the actual amount of water historically diverted and consumed is critical. E.g., In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC., DNRC Proposal for Decision adopted by Final Order (2005). The Department cannot assume that a parcel received the full duty of water or that it received sufficient water to constitute full service irrigation for optimum plant growth. Even when it seems clear that no other rights could be affected solely by a particular change in the location of diversion, it is essential that the change also not enlarge an existing right. See MacDonald, 220 Mont. at 529, 722 P.2d at 604; Featherman, 43 Mont. at 316-17, 115 P. at 986; Trail's End Ranch, L.L.C. v. Colorado Div. of Water Resources 91 P.3d 1058, 1063 (Colo., 2004).

52. The Department has adopted a rule providing for the calculation of historic consumptive use where the applicant proves by a preponderance of the evidence that the acreage was historically irrigated. Admin. R. M. 36.12.1902 (16). In the alternative an applicant may present its own evidence of historic beneficial use. In this case Applicant has elected to proceed under Admin. R.M. 36.12.1902. (FOF Nos. 12-13).

53. If an applicant seeks more than the historic consumptive use as calculated by Admin.R.M .36.12.1902 (16), the applicant bears the burden of proof to demonstrate the amount of historic consumptive use by a preponderance of the evidence. The actual historic use of water could be less than the optimum utilization represented by the calculated duty of water in any particular case. E.g., Application for Water Rights in Rio Grande County 53 P.3d 1165 (Colo., 2002) (historical use must be quantified to ensure no enlargement); In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC., supra; Orr v. Arapahoe Water and Sanitation Dist. 753 P.2d 1217, 1223 -1224 (Colo., 1988)(historical use of a water right could

very well be less than the duty of water); Weibert v. Rothe Bros., Inc., 200 Colo. 310, 317, 618 P.2d 1367, 1371 - 1372 (Colo. 1980) (historical use could be less than the optimum utilization “duty of water”).

54. Based upon the evidence, the Applicant has proven by a preponderance of the evidence the historic use of Statements of Claim Nos. 76G 126427 and 76G 126428. The historic flow rate is 14.9 CFS and the historic diverted volume is 884.4 AF. The estimated historic consumptive use is 234.7 AF. (FOF Nos. 6-15).

55. Based upon the comparative analysis of historic water use and planned use under the proposed change, the Applicant has proven that the proposed change in appropriation right will not adversely affect the use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued. §85-2-402(2)(b), MCA. (FOF Nos. 16-32).

BENEFICIAL USE

56. A change applicant must prove by a preponderance of the evidence the proposed use is a beneficial use. §§85-2-102(4) and -402(2)(c), MCA. Beneficial use is and has always been the hallmark of a valid Montana water right: “[T]he amount actually needed for beneficial use within the appropriation will be the basis, measure, and the limit of all water rights in Montana . . .” McDonald, 220 Mont. at 532, 722 P.2d at 606. The analysis of the beneficial use criterion is the same for change authorizations under §85-2-402, MCA, and new beneficial permits under §85-2-311, MCA. Admin.R.M. 36.12.1801. The amount of water that may be authorized for change is limited to the amount of water necessary to sustain the beneficial use. E.g., Bitterroot River Protective Association v. Siebel, *Order on Petition for Judicial Review*, Cause No. BDV-2002-519, Montana First Judicial District Court (2003) (*affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518); Worden v. Alexander, 108 Mont. 208, 90 P.2d 160 (1939); Allen v. Petrick, 69 Mont. 373, 222 P. 451(1924); Sitz Ranch v. DNRC, DV-10-13390, Montana Fifth Judicial District Court, *Order Affirming DNRC Decision*, Pg. 3 (2011)(citing BRPA v. Siebel, 2005 MT 60, and rejecting applicant’s argument that it be allowed to appropriate 800 acre-feet when a typical year would require 200-300 acre-feet); Toohy v. Campbell, 24 Mont. 13, 60 P. 396 (1900)(“The policy of the law is to prevent a person from acquiring exclusive control of a stream, or any part thereof, not for present and actual beneficial use, but for mere future speculative profit or advantage, without regard to existing or contemplated beneficial uses. He is restricted in the

amount that he can appropriate to the quantity needed for such beneficial purposes.”); §85-2-312(1)(a), MCA (DNRC is statutorily prohibited from issuing a permit for more water than can be beneficially used).

57. Applicant proposes to use water for irrigation which is a recognized beneficial use. §85-2-102(4), MCA. Applicant has proven by a preponderance of the evidence that combined water use associated with 76G 126427 and 76G 126428, including a flow rate of 5.17 CFS and diverted volume of 271.4 AF, are the amounts needed to sustain the beneficial use, and are within the standards set by DNRC Rule and other standards. §85-2-402(2)(c), MCA (FOF Nos. 33-36).

ADEQUATE MEANS OF DIVERSION

58. Pursuant to §85-2-402 (2)(b), MCA, the Applicant must prove by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate. This codifies the prior appropriation principle that the means of diversion must be reasonably effective for the contemplated use and may not result in a waste of the resource. Crowley v. 6th Judicial District Court, 108 Mont. 89, 88 P.2d 23 (1939); In the Matter of Application for Beneficial Water Use Permit No. 41C-11339900 by Three Creeks Ranch of Wyoming LLC (DNRC Final Order 2002)(information needed to prove that proposed means of diversion, construction, and operation of the appropriation works are adequate varies based upon project complexity; design by licensed engineer adequate).

59. Pursuant to §85-2-402 (2)(b), MCA, applicant has proven by a preponderance of the evidence that the proposed means of diversion, means of conveyance, construction, and operation of the new diversion works are adequate for the proposed beneficial use. (FOF Nos. 37-40).

POSSESSORY INTEREST

60. Pursuant to §85-2-402(2)(d), MCA, the Applicant must prove by a preponderance of the evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. See also Admin.R.M. 36.12.1802

61. The Applicant has proven by a preponderance of the evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. (FOF No. 41).

CONDITIONS

IN THE MATTER OF APPLICATION TO CHANGE A WATER RIGHT NO. 76G 30149275 THE DEPARTMENT FINDS THE FOLLOWING CONDITIONS ARE NECESSARY TO MEET THE STATUTORY CRITERIA FOR CHANGES OF WATER RIGHT SET FORTH AT § 85-2-402, MCA AND ALLOW FOR ISSUANCE OF THE CHANGE AUTHORIZATION:

****WATER MEASUREMENT RECORDS REQUIRED**

THE APPROPRIATORS SHALL INSTALL A MEASURING DEVICE IN THE CONVEYANCE FACILITY AS NEAR AS PRACTICAL TO THE HEADGATE ON THE SOURCE, IN ORDER TO MEASURE APPROPRIATIONS. THE TYPE AND LOCATION OF THE DEVICE MUST BE APPROVED BY THE DEPARTMENT. THE APPROPRIATOR SHALL KEEP A WRITTEN RECORD OF THE FLOW RATE AND VOLUME OF WATER DIVERTED, INCLUDING THE PERIOD OF TIME OF DIVERSION. RECORDS MUST ACCOUNT SEPARATELY FOR ANY APPROPRIATIONS UNDER THIS AUTHORIZATION FROM APPROPRIATIONS UNDER ANY OTHER WATER RIGHT USING THE SAME DIVERSION WORKS AND CONVEYANCE FACILITY. RECORDS SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. FAILURE TO SUBMIT REPORTS AS REQUIRED BY THESE CONDITIONS MAY BE CAUSE FOR REVOCATION OF THE PERMIT. THE RECORDS MUST BE SENT TO THE HELENA WATER RESOURCES REGIONAL OFFICE AT THE ADDRESS BELOW. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING/MONITORING DEVICE SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE ACCURATELY DURING PERIODS OF APPROPRIATION.

SUBMIT RECORDS TO:
HELENA WATER RESOURCES OFFICE
1424 NINTH AVENUE
HELENA, MT 59620-1601
PHONE: 406-444-6999

PRELIMINARY DETERMINATION

Subject to the terms and analysis in this Preliminary Determination Order, the Department preliminarily determines that this Application to Change Water Right No. 76G 30149275 should be GRANTED subject to the following.

The Appropriators are authorized to change their point of diversion and place of use. Applicant is authorized to move their diversion from the Cowan Ditch headgate (SWNWSW Section 9, T7N, R8W, Powell County) to the Stejer Ditch headgate (NESWSW Section 9, T7N, R8W, Powell County). The place of use, formerly flood irrigated and described as 245 acres located in the SESESE Section 31, T8N, R8W and E2, SW, and SENW Section 6, T7N, R8W, all in Powell County, is authorized to be changed to 302 acres consisting of two partial pivots in Section 31, T8N, R8W and Section 6, T7N, R8W and a full center pivot in Sections 7 and 8, T7N, R8W, Powell County.

The flow rate for the proposed pivot system is 5.17 CFS up to 271.4 AF. The period of diversion/use for 76G 126427 is April 15 to October 15. The period of diversion/use for 76G 126428 is March 15 to July 15. Appropriations must be measured and records kept and reported to the Department as described in the Conditions section of this Preliminary Determination.

NOTICE

This Department will provide public notice of this Application and the Department's Preliminary Determination to Grant pursuant to §85-2-307, MCA. The Department will set a deadline for objections to this Application pursuant to §§85-2-307, and -308, MCA. If this Application receives a valid objection, it will proceed to a contested case proceeding pursuant to Title 2 Chapter 4 Part 6, MCA, and §85-2-309, MCA. If this Application receives no valid objection or all valid objections are unconditionally withdrawn, the Department will grant this Application as herein approved. If this Application receives a valid objection(s) and the valid objection(s) are conditionally withdrawn, the Department will consider the proposed condition(s) and grant the Application with such conditions as the Department decides necessary to satisfy the applicable criteria. E.g., §§85-2-310, -312, MCA.

DATED this 20th day of October 2021.

/Original signed by Scott Irvin/
Scott Irvin, Regional Manager
Lewistown Regional Office
Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 20^h day of October 2021, by first class United States mail.

Aspen Grove Ranch LLC
Sherman G. & Bonnie J. Anderson
PO Box 311
Deer Lodge, MT 59722-0311

Regional Office, (406) 538-7459